

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
**WO 2005/060156 A1**

(51) International Patent Classification<sup>7</sup>: **H04L 12/18**,  
12/42, 12/433

(21) International Application Number:  
PCT/EP2004/053185

(22) International Filing Date:  
30 November 2004 (30.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
03368121.4 19 December 2003 (19.12.2003) EP

(71) Applicant (for all designated States except US): **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; IBM Corporation, New Orchard Road, Armonk, New York 10504 (US).

(71) Applicant (for MC only): **COMPAGNIE IBM FRANCE** [FR/FR]; Tour Descartes, La Defense 5, 2 Avenue Gambetta, F-92400 COURBEVOIE (FR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DENECHEAU, Lionel** [FR/FR]; 931, chemin du Pigeonnier, F-06480 La

Colle sur Loup (FR). **ESTEVE, Denis** [FR/FR]; 1400 chemin de la plus haute Sine, F-06140 VENCE (FR). **SICSIC, Patrick** [FR/FR]; Bastide du Loup, 211, Chem de la Carriere Montmeuille, F-06480 La Colle sur loup (FR).

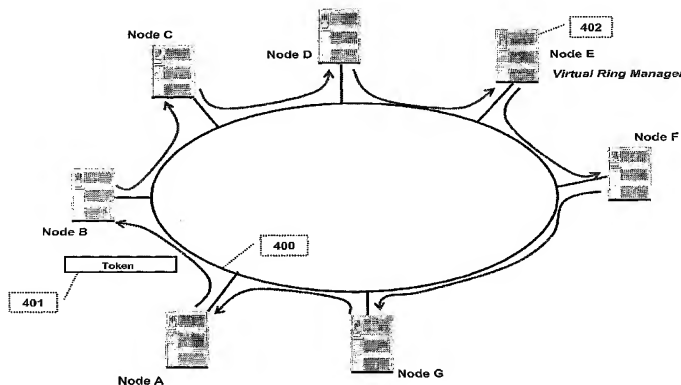
(74) Agent: **ETORRE, Yves, Nicolas**; Compagnie IBM France, Intellectual Property Department, F-06610 La Gaude (FR).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR COMMUNICATING ON A VIRTUAL RING IN AN INTERNET PROTOCOL NETWORK



(57) Abstract: The present invention is directed to a system, method, computer program in a node within a network comprising a transport layer protocol providing end to end data transfer, for multicasting datagrams on a virtual ring, each node on the virtual ring being logically connected according to the network transport layer protocol to two and only two neighbor nodes through virtual connections, an upstream neighbor node and a downstream neighbor node. The method comprises the steps of: • sending a virtual ring datagram to the downstream neighbor node on the virtual ring; said virtual ring datagram comprising a virtual ring identifier, means for identifying the node originator of the virtual ring datagram, and data; receiving a token, identifying the virtual ring and forwarding the token to the downstream neighbor node on the identified virtual ring; if the received datagram is a virtual ring datagram: identifying the virtual ring and checking the node originator of the received virtual ring datagram; if the received virtual ring datagram has not been locally originated: • processing data comprised in said virtual ring datagram; • forwarding said virtual ring datagram to the downstream neighbor node on the identified virtual ring; if the received virtual ring datagram has been locally originated: removing the virtual ring datagram from the virtual ring.

WO 2005/060156 A1



FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,  
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

**Published:**

— *with international search report*

**Declaration under Rule 4.17:**

— *of inventorship (Rule 4.17(iv)) for US only*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*